

CLAIMS

✓ 1. A method, comprising:

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10 a) providing: i) a test compound, ii) a growth media formulated to allow scoring of nonsense suppression in yeast, and iii) modified yeast cells derived from wild type yeast cells, wherein said modified yeast cells express reduced cytosolic levels of Mod5p or its homolog as compared to said wild type yeast cells, and wherein said modified yeast cells comprise a gene with a nonsense mutation and a suppressor tRNA gene coding for a tRNA modified with isopentenyl adenosine by Mod5 or its homolog;

b) exposing a portion of said modified yeast cells to said test compound and said growth media to create a treated portion and an untreated portion; and

c) measuring for growth of said treated portion.

15 2. The method of Claim 1, wherein said measuring of step (c) comprises examining the color of said yeast cells of said treated portion.

20 3. The method of Claim 1, wherein said measuring of step (c) comprises comparing said treated portion with said untreated portion, wherein said untreated portion is exposed to said growth media in the absence of said test compound.

25 4. A method, comprising:

30 a) providing: i) a test compound, ii) a growth media lacking adenine, and iii) modified yeast cells derived from wild type yeast cells, wherein said modified yeast cells express reduced cytosolic levels of Mod5p as compared to said wild type yeast cells, and wherein said modified yeast cells comprise an *ADE* gene having a nonsense mutation and a gene coding for a nonsense suppressor tRNA;

b) exposing a portion of said modified yeast cells to said test compound and said growth media to create a treated portion and an untreated portion; and

c) measuring for growth of said treated portion.

35 5. The method of Claim 4, wherein said measuring of step (c) comprises examining the color of said yeast cells of said treated portion.

40 6. The method of Claim 4, wherein said measuring of step (c) comprises comparing said treated portion with said untreated portion, wherein said untreated portion is exposed to said growth media in the absence of said test compound.

✓ 7. A method, comprising:

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- a) providing: i) a test compound, ii) a growth media lacking adenine, and iii) modified yeast cells derived from wild type yeast cells, wherein said modified yeast cells express reduced cytosolic levels of Mod5p as compared to said wild type yeast cells, and wherein said modified yeast cells comprise an *ADE* gene having a nonsense mutation and a *SUP7* gene coding for a tRNA;
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- b) exposing a portion of said modified yeast cells to said test compound and said growth media to create a treated portion and an untreated portion; and
- c) measuring for growth of said treated portion.

8. The method of Claim 7, wherein said measuring of step (c) comprises examining the color of said yeast cells of said treated portion.

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9. The method of Claim 7, wherein said measuring of step (c) comprises comparing said treated portion with said untreated portion, wherein said untreated portion is exposed to said growth media in the absence of said test compound.

20 10. A method, comprising:

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- a) providing: i) a test compound, ii) a growth media lacking arginine and comprising a canavanine salt, and iii) modified yeast cells derived from wild type yeast cells, wherein said modified yeast cells express reduced cytosolic levels of Mod5p as compared to said wild type yeast cells, and wherein said modified yeast cells comprise a *CAN1* gene having a nonsense mutation and a gene coding for a nonsense suppressor tRNA;
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- b) exposing a portion of said modified yeast cells to said test compound and said growth media to create a treated portion and an untreated portion; and
- c) measuring for growth of said treated portion.

11. The method of Claim 10, wherein said measuring of step (c) comprises comparing said treated portion with said untreated portion, wherein said untreated portion is exposed to said growth media in the absence of said test compound.

35 ✓ 12. A method, comprising:

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- a) providing: i) a test compound, ii) a growth media lacking arginine and comprising a canavanine salt, and iii) modified yeast cells derived from wild type yeast cells, wherein said modified yeast cells express reduced cytosolic levels of Mod5p as compared to said wild type yeast cells, and wherein said modified yeast cells comprise a *CAN1* gene having a nonsense mutation and a *SUP7* gene coding for a tRNA;
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- b) exposing a portion of said modified yeast cells to said test compound and said growth media to create a treated portion and an untreated portion; and
- c) measuring for growth of said treated portion.

13. The method of Claim 12, wherein said measuring of step (c) comprises comparing said treated portion with said untreated portion, wherein said untreated portion is exposed to said growth media in the absence of said test compound.

14. A method, comprising:

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- a) providing: i) a test compound, ii) a growth media lacking lysine, and iii) modified yeast cells derived from wild type yeast cells, wherein said modified yeast cells express reduced cytosolic levels of Mod5p as compared to said wild type yeast cells, and wherein said modified yeast cells comprise a *LYS2* gene having a nonsense mutation and a gene coding for a nonsense suppressor tRNA;
 - b) exposing a portion of said modified yeast cells to said test compound and said growth media to create a treated portion and an untreated portion; and
 - c) measuring for growth of said treated portion.

15. The method of Claim 14, wherein said measuring of step (c) comprises comparing said treated portion with said untreated portion, wherein said untreated portion is exposed to said growth media in the absence of said test compound.

16. The method of Claim 14, wherein said gene coding for said nonsense suppressor tRNA is selected from the group consisting of *SUP7* and *SUP11*.

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